

Appl. No. 09/944,656
Amdt. Dated 08/06/2004
Reply to Office Action of July 14, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A gain control circuit in a radio frequency transmission path for an amplifier stage adjacent ~~and~~ an antenna and having an input terminal, an output terminal and first and second control terminals comprising:
 - a fixed resistance connected between said input terminal and said output terminal;
 - a first semiconductive circuit connected between said fixed resistance ~~at~~ and a level of reference potential, and a second semiconductive circuit connected across said fixed resistance, a control terminal of said first semiconductive circuit for connection to a gain control signal for decreasing resistance of said first semiconductive circuit in response to increase of the radio frequency signal, and a control terminal of the second semi-conductive circuit connected to a complimentary gain control signal for having its resistance raised and increasing impedance of said gain control circuit in correspondence with a decrease of impedance said first semiconductive circuit.
2. (Currently Amended) The gain circuit of claim 1 where an said first and second semi-conductive circuits comprise source-drain circuits of first and second CMOS transistors respectively, and said control ~~electrode-terminal~~ of each said semiconductive circuit comprises a gate electrode.
3. (Original) The circuit according to claim 2 wherein said resistance comprises first and second resistors and said first semiconductive circuit is connected to a terminal intermediate said first and second resistors.
4. (Original) The circuit of claim 3 wherein said first and second resistors are of equal value.

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5. (Original) An output signal path and a transmitter comprising a gain control circuit according to claim 4, a modulation stage output connected to the input terminal of said gain control circuit and a final stage power amplifier coupled between said output terminal of said gain control circuit and an antenna.

6. (Original) A receiver input circuit comprising a gain circuit according to claim 4, an input fixed amplifier coupled between an antenna and said input terminal and said gain circuit and an amplifier connected between said output terminal of said gain circuit and an input to a demodulation stage.

7. (Original) In a direct conversion wireless communication transceiver having an input stage and an output stage, said input and output stages respectively comprising amplifiers adjacent an antenna, the improvement wherein said receiver comprises a fixed gain input amplifier coupled to a gain circuit according to claim 4.

8. (Original) The improvement according to claim 7 wherein said output stage comprises a fixed gain amplifier coupled to an antenna and a gain circuit according to claim 4 providing an input to said power amplifier.

9. (Original) In a direct conversion transceiver comprising an input stage and an output stage the improvement wherein said output stage comprises a fixed power amplifier connected to coupled to an antenna and a gain circuit according to claim 4 in providing an input in to said power amplifier circuit.

10. (Currently Amended) A method for controlling gain and providing a constant impedance in a signal path comprising the steps of measuring a radio frequency signal to produce a gain control signal;

proportioning said gain control signal into first and second components, to provide first and second gain control signals;
adjusting gain of said ~~circuit~~ signal path in accordance with said first control signal;

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and changing the impedance of said ~~circuit~~signal path in accordance with impedance change provided by said gain adjustment.

11. (Currently Amended) The method of claim 10 comprising providing first and second fixed resistances connected between an input terminal and an output terminal of the gain control circuit, wherein ~~the step of~~ adjusting gain comprises varying conductivity of a source-drain circuit connected between a terminal intermediate said first and second resistors ~~end and~~ ground inversely with magnitude of the measured radio frequency signal, and wherein ~~the step of~~ adjusting impedance ~~comprising~~ comprises increasing resistance of a source-drain circuit connected across the first and second resistors.